

# Are clinicians failing to supply adequate information when requesting a histopathological investigation?

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## Abstract

**Aims**—There is a perception among histopathologists that specimens are often received without adequate clinical details. This is the first study to determine the adequacy of information provided when histopathological investigations are requested.

**Methods**—Two thousand sequential requests for histological examination were assessed for adequacy and completeness.

**Results**—There was no significant difference in the demographic details supplied by physicians and surgeons. Clinical details were inadequate in 6.1% of cases: those from physicians were significantly more often adequate (98.7% *v* 90.6%) and more often included a diagnosis (74.4% *v* 38.8%) than those from surgeons. Physicians were more likely to supply their name and contact number but requests frequently lacked details of the sender.

**Conclusions**—Specimens are infrequently received with inadequate demographic details, but clinical details and details of the sender are more often lacking. Education of clinical colleagues is required if pathologists are to manage the demand for the service.

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It has long been recognised that the elimination of outdated, redundant, and unnecessary laboratory work can greatly improve standards.<sup>1</sup> Haematology and clinical chemistry laboratories have already taken important steps in demand management in an attempt to optimise the use of their services, including reducing the number of unnecessary repeat investigations and the use of computerised interventions.<sup>2,3</sup> In contrast, there has been little coordinated effort to reduce redundancy in surgical pathology. Instead, the demands placed on histopathologists have risen, in part because of an increase in use and the increasing length and complexity of surgical pathology reports.<sup>4,5</sup>

There is a perception among histopathologists that clinicians do not understand the working of histopathology departments, based in part upon the poor quality of requests received for histopathological investigations.<sup>6</sup> We investigated the adequacy of information provided by clinicians requesting a histopathological investigation.

## Methods

Two thousand sequential requests for histopathological examinations by hospital based clinicians at the Royal Hallamshire Hospital in Sheffield between January and March 1998 were studied retrospectively. The requesting clinicians were unaware that the data would be recorded. Requests originating from general practitioners and requests for cytological examinations were excluded. Cases from general practitioners were excluded because such cases are not representative of the department's surgical diagnostic workload (comprising mostly dermatological specimens), because their requests for pathological investigation are submitted on a different request form, and because general practitioners do not receive the same feedback on their requests (in the form of multidisciplinary team meetings and clinicopathological conferences) as hospital based clinicians. Each request was assessed for the presence and completeness of the information prompted by the request form: demographic details (addressograph label, full name, date of birth, hospital number, and patient location); specimen description; the type of investigation required; an adequate clinical history (defined as a clinical history and/or differential diagnosis); and the signature, name, and contact number of the requesting clinician. These data should be present on 100% of requests if completed correctly. The provision of data by physicians versus surgeons, and by consultants versus trainees was compared in a Microsoft Excel 2000 spreadsheet using the  $\chi^2$  test with Yates's correction where appropriate. Given the number of variables being assessed, a Bonferroni correction was applied and a value of  $p = 0.001$  was therefore considered the limit of significance.

## Results

Of the 2000 requests, 1198 (59.9%) originated from surgeons, 258 of whom were consultants and 940 trainees. The remaining 802 (40.1%) request forms were completed by physicians, 135 of whom were consultants and 667 trainees. Tables 1 and 2 summarise the results.

Surgical trainees were more likely than medical trainees to give an inadequate clinical history (10.1% *v* 1.5%;  $p < 0.0001$ ) and less likely to proffer a diagnosis (38.3% *v* 75.0%;  $p < 0.0001$ ). The diagnoses offered by medical and surgical trainees were equally as likely to be correct (58.2% *v* 66.9%;  $p = 0.009$ ). Surgical consultants were no more likely than medical consultants to give an inadequate clinical

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Table 1 Information supplied by clinicians of all grades requesting a histopathological investigation, comparing physicians and surgeons

Parameter	Total n (%)	Physician n (%)	Surgeon n (%)	$\chi^2$	p Value
<b>Demographics</b>					
Addressograph label	1862 (93.1)	761 (94.9)	1101 (91.9)	6.7	NS
Full name stated	2000 (100)	802 (100)	1198 (100)	–	NS
Date of birth	1991 (99.6)	797 (99.4)	1194 (99.7)	0.4	NS
Hospital number	1996 (99.8)	802 (100)	1194 (99.7)	–	NS
Patient location	1975 (98.8)	790 (98.5)	1185 (98.9)	0.4	NS
<b>Specimen collection</b>					
Date	1963 (98.2)	786 (98.0)	1177 (98.3)	0.2	NS
Time (am/pm)	275 (13.7)	31 (3.9)	244 (18.7)	110.3	<0.0001
Time (exact)	139 (7.0)	39 (4.9)	100 (8.4)	9.0	NS
Time not stated	1586 (79.3)	730 (91.0)	856 (71.5)	111.3	<0.0001
<b>Specimen description</b>	1977 (98.9)	794 (99.0)	1183 (98.8)	0.1	NS
<b>Investigation requested</b>	1947 (97.4)	783 (97.6)	1164 (97.2)	0.4	NS
<b>Clinical history given</b>					
Inadequate/none	122 (6.1)	11 (1.4)	111 (9.4)	53.7	<0.0001
Differential diagnosis given	1062 (53.1)	597 (74.4)	465 (38.8)	244.8	<0.0001
Correct diagnosis given	668 (62.9)	356 (59.6)	312 (67.1)	6.2	NS
<b>Originator</b>					
Signature	1830 (91.5)	721 (89.9)	1109 (92.6)	4.4	NS
Name printed	949 (47.5)	428 (53.4)	521 (43.5)	18.8	<0.0001
Contact number	666 (33.3)	337 (42.0)	329 (27.5)	45.8	<0.0001

NS, not significant.

history (6.2% *v* 0.7%;  $p < 0.024$ ) but were less likely to proffer a diagnosis (40.7% *v* 71.9%;  $p < 0.0001$ ). The diagnoses offered by medical and surgical consultants were equally as likely to be correct (67.0% *v* 67.6%;  $p = 0.927$ )

### Discussion

A histopathology service must be used appropriately if it is to be efficient and avoid redundancy. Users of the service who provide insufficient information about the patient and themselves will generate redundancy within the service. Demographic details identify the patient and allow correlation with previous investigations. A written statement of the nature of the specimen helps to avoid identification errors. Knowledge of the test required directs the sample to the appropriate laboratory (for example, preventing a lymph node being processed for microbiological culture rather than histopathology). Adequate clinical information permits inappropriate investigations to be discarded,<sup>7</sup> informs the use of special staining techniques, and permits the pathologist to tailor the report to the clinical need. Details of the requesting clinician are invaluable and allow additional information to be obtained and urgent results to be conveyed

rapidly. Failure to provide such information may impede the diagnostic process and lead to delays in reporting.<sup>8,9</sup>

Overall, requests received from hospital based clinicians are adequately completed, although there is room for improvement. The only information that appeared on all requests was the patient's name (although the remaining demographic details and details of the specimen and request required were almost always supplied). The date of specimen collection was frequently reported (98.2%) but the time of sampling was usually absent (79.3%).

Ideally, all specimens should be accompanied by adequate clinical details but these were absent in 6.1% of requests. This is comparable to the findings of Nakhleh and Zarbo,<sup>8</sup> who found that 2.4% of cases submitted to surgical pathology had no clinical details on the request form. In our study, most cases like this originated from surgeons, and either no clinical details were supplied or only the operation was stated—for example, specimen: gallbladder; clinical details: cholecystectomy. A differential diagnosis was given in 53.1% of requests, most often by physicians, but only 62.9% of these included the correct diagnosis. The omission of clinical details is likely to be no better or worse

Table 2 Comparison of information provided by consultant and trainee staff completing requests for histopathological information

Parameter	Total n (%)	Consultant n (%)	Trainee n (%)	$\chi^2$	p Value
<b>Physicians</b>					
Clinical history given					
Inadequate/none	11 (1.4)	1 (0.7)	10 (1.5)	0.1	NS
Differential diagnosis given	597 (74.4)	97 (71.9)	500 (75.0)	0.6	NS
Correct diagnosis given	356 (59.6)	65 (67.0)	291 (58.2)	2.3	NS
<b>Originator</b>					
Signature	721 (89.9)	134 (99.3)	587 (88.0)	14.4	0.0001
Name printed	428 (53.4)	19 (14.1)	409 (61.3)	100.7	<0.0001
Contact number	337 (42.0)	10 (7.4)	327 (49.0)	79.8	<0.0001
<b>Surgeons</b>					
Clinical history given					
Inadequate/none	111 (9.3)	16 (6.2)	95 (10.1)	3.8	NS
Differential diagnosis given	465 (38.8)	105 (40.7)	360 (38.3)	0.5	NS
Correct diagnosis given	312 (67.1)	71 (67.6)	241 (66.9)	0.0	NS
<b>Originator</b>					
Signature	1109 (92.6)	244 (94.6)	865 (92.0)	1.9	NS
Name printed	521 (43.5)	126 (48.8)	395 (42.0)	3.8	NS
Contact number	340 (28.4)	38 (14.7)	302 (32.1)	30.2	<0.0001

NS, not significant.

than the provision of an incorrect diagnosis. Nakhleh *et al* have shown that the absence of clinical details delayed diagnosis in only 0.73% of cases.<sup>9</sup> However, a misleading diagnosis may lead to extraneous and unnecessary additional tests (for example, histochemical and immuno-histochemical stains) and therefore will have demand management and resource implications. Indeed, balancing these two types of errors is crucial to improving the situation. A summary of the clinical scenario rather than a list of differential diagnoses with explicit questions regarding specific suspected diagnoses would avoid this problem. Although most clinicians signed their request forms, a legible name was present in less than half, and only a third added a contact number.

All histopathology specimens should be accompanied by a completed request form; this is the clinicians' first contact with the histopathology department. Failure to provide the requested information prevents the pathologist assessing the appropriateness of the investigation and places increased demands upon laboratory, secretarial, and pathologist's time. If

demand management in histopathology is to be effective, clinicians of all grades and specialties must be educated to request the service appropriately.

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